

SEQUENCE LISTING

<110> Ebner, Reinhard
Chopra, Arvind
Ruben, Steven M.

<120> Connective Tissue Growth Factor-3

<130> 1488.0630002

<150> US 60/030,720

<151> 1996-11-08

<150> US 08/966,020

<151> 1997-11-07

<160> 13

<170> PatentIn version 3.0

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| | Met | Arg | Gly | Thr | Pro | Lys | Thr | His | Leu | Leu | Ala | Phe | Ser | Leu | | |
| | | | | | -15 | | | | | | -10 | | | | | |
| ctc | tgc | ctc | ctc | tca | aag | gtg | cgt | acc | cag | ctg | tgc | ccg | aca | cca | tgt | 95 |
| Leu | Cys | Leu | Leu | Ser | Lys | Val | Arg | Thr | Gln | Leu | Cys | Pro | Thr | Pro | Cys | |
| -5 | | | | -1 | 1 | | | | 5 | | | | | 10 | | |
| acc | tgc | ccc | tgg | cca | cct | ccc | cga | tgc | ccg | ctg | gga | gta | ccc | ctg | gtg | 145 |
| Thr | Cys | Pro | Trp | Pro | Pro | Pro | Arg | Cys | Pro | Leu | Gly | Val | Pro | Leu | Val | |
| | | | 15 | | | | | 20 | | | | | 25 | | | |
| ctg | gat | ggc | tgt | ggc | tgc | tgc | cgg | gta | tgt | gca | cgg | cgg | ctg | ggg | gag | 194 |
| Leu | Asp | Gly | Cys | Gly | Cys | Cys | Arg | Val | Cys | Ala | Arg | Arg | Leu | Gly | Glu | |
| | | 30 | | | | | 35 | | | | 40 | | | | | |
| ccc | tgc | gac | caa | ctc | cac | gtc | tgc | gac | gcc | agc | cag | ggc | ctg | gtc | tgc | 242 |
| Pro | Cys | Asp | Gln | Leu | His | Val | Cys | Asp | Ala | Ser | Gln | Gly | Leu | Val | Cys | |
| | 45 | | | | | 50 | | | | | 55 | | | | | |
| cag | ccc | ggg | gca | gga | ccc | ggt | ggc | cgg | ggg | gcc | ctg | tgc | ctc | ttg | gca | 291 |
| Gln | Pro | Gly | Ala | Gly | Pro | Gly | Gly | Arg | Gly | Ala | Leu | Cys | Leu | Leu | Ala | |
| 60 | | | | | 65 | | | | | 70 | | | | | 75 | |
| gag | gac | gac | agc | agc | tgt | gag | gtg | aac | ggc | cgc | ctg | tat | cgg | gaa | ggg | 335 |
| Glu | Asp | Asp | Ser | Ser | Cys | Glu | Val | Asn | Gly | Arg | Leu | Tyr | Arg | Glu | Gly | |
| | | | | 80 | | | | | 85 | | | | | 90 | | |
| gag | acc | ttc | cag | ccc | cac | tgc | agc | atc | cgc | tgc | cgc | tgc | gag | gac | ggc | 385 |
| Glu | Thr | Phe | Gln | Pro | His | Cys | Ser | Ile | Arg | Cys | Arg | Cys | Glu | Asp | Gly | |
| | | | 95 | | | | | 100 | | | | | 105 | | | |
| ggc | ttc | acc | tgc | gtg | ccg | ctg | tgc | agc | gag | gat | gtg | cgg | ctg | ccc | agc | 434 |
| Gly | Phe | Thr | Cys | Val | Pro | Leu | Cys | Ser | Glu | Asp | Val | Arg | Leu | Pro | Ser | |
| | | 110 | | | | | 115 | | | | | 120 | | | | |
| tgg | gac | tgc | ccc | cac | ccc | agg | agg | gtc | gag | gtc | ctg | ggc | aag | tgc | tgc | 482 |
| Trp | Asp | Cys | Pro | His | Pro | Arg | Arg | Val | Glu | Val | Leu | Gly | Lys | Cys | Cys | |
| | 125 | | | | | 130 | | | | | 135 | | | | | |
| cct | gag | tgg | gtg | tgc | ggc | caa | gga | ggg | gga | ctg | ggg | acc | cag | ccc | ctt | 531 |
| Pro | Glu | Trp | Val | Cys | Gly | Gln | Gly | Gly | Gly | Leu | Gly | Thr | Gln | Pro | Leu | |
| 140 | | | | | 145 | | | | | 150 | | | | | 155 | |
| cca | gcc | caa | gga | ccc | cag | ttt | tct | ggc | ctt | gtc | tct | tcc | ctg | ccc | cct | 571 |
| Pro | Ala | Gln | Gly | Pro | Gln | Phe | Ser | Gly | Leu | Val | Ser | Ser | Leu | Pro | Pro | |
| | | | | 160 | | | | | 165 | | | | | 170 | | |
| ggt | gtc | ccc | tgc | cca | gaa | tgg | agc | acg | gcc | tgg | gga | ccc | tgc | tgc | acc | 621 |

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| Gly | Val | Pro | Cys | Pro | Glu | Trp | Ser | Thr | Ala | Trp | Gly | Pro | Cys | Ser | Thr | |
| | | | 175 | | | | | 180 | | | | | 185 | | | |
| acc | tgt | ggg | ctg | ggc | atg | gcc | acc | cgg | gtg | tcc | aac | cag | aac | cgc | ttc | 674 |
| Thr | Cys | Gly | Leu | Gly | Met | Ala | Thr | Arg | Val | Ser | Asn | Gln | Asn | Arg | Phe | |
| | | 190 | | | | | 195 | | | | 200 | | | | | |
| tgc | cga | ctg | gag | acc | cag | cgc | cgc | ctg | tgc | ctg | tcc | agg | ccc | tgc | cca | 722 |
| Cys | Arg | Leu | Glu | Thr | Gln | Arg | Arg | Leu | Cys | Leu | Ser | Arg | Pro | Cys | Pro | |
| | 205 | | | | | 210 | | | | | 215 | | | | | |
| ccc | tcc | agg | ggg | cgc | agt | cca | caa | aac | agt | gcc | ttc | tagagccggg | | | | 768 |
| Pro | Ser | Arg | Gly | Arg | Ser | Pro | Gln | Asn | Ser | Ala | Phe | | | | | |
| 220 | | | | | 225 | | | | 230 | | | | | | | |
| ctgggaatgg | ggacacgggtg | tccaccatcc | ccagctgggtg | gccctgtgccc | tgggcccctgg | | | | | | | | | | | 823 |
| gctgatggaa | gatgggtccgt | gcccaggccc | ttggctgcag | gcaacacatt | agcctgggtcc | | | | | | | | | | | 833 |
| caccatgcag | aacaccaata | ttaacacgct | gcctgggtctg | tctggatccc | gaggtatggc | | | | | | | | | | | 943 |
| agaggtgcaa | gacctagtcc | cctttcctct | aactcactgc | ctaggaggct | ggccaagggtg | | | | | | | | | | | 1003 |
| tccagggtcc | tctagcccac | tccctgccta | cacacacagc | ctatatcaaa | catgcacacg | | | | | | | | | | | 1063 |
| ggcgagcttt | ctctccgact | tcccctgggc | aagagatggg | acaagcagtc | ccttaatat | | | | | | | | | | | 1123 |
| gaggctgcag | caggtgctgg | gctggactgg | ccatttttct | gggggtagga | tgaagagaa | | | | | | | | | | | 1183 |
| gcacacagag | attctggatc | tcctgctgcc | ttttctggag | tttgtaaaat | tgttcttgaa | | | | | | | | | | | 1243 |
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| Met | Arg | Gly | Thr | Pro | Lys | Thr | His | Leu | Leu | Ala | Phe | Ser | Leu | Leu | Cys |
| | | | | -15 | | | | -10 | | | | | -5 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Ser | Lys | Val | Arg | Thr | Gln | Leu | Cys | Pro | Thr | Pro | Cys | Thr | Cys |
| | -1 | 1 | | | | | 5 | | | | 10 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Trp | Pro | Pro | Pro | Arg | Cys | Pro | Leu | Gly | Val | Pro | Leu | Val | Leu | Asp |
| 15 | | | | | | 20 | | | | | 25 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Cys | Gly | Cys | Cys | Arg | Val | Cys | Ala | Arg | Arg | Leu | Gly | Glu | Pro | Cys |
| 30 | | | | | 35 | | | | | 40 | | | | | 45 |

Asp Gln Leu His Val Cys Asp Ala Ser Gln Gly Leu Val Cys Gln Pro
50 55 60

Gly Ala Gly Pro Gly Gly Arg Gly Ala Leu Cys Leu Leu Ala Glu Asp
65 70 75

Asp Ser Ser Cys Glu Val Asn Gly Arg Leu Tyr Arg Glu Gly Glu Thr
80 85 90

Phe Gln Pro His Cys Ser Ile Arg Cys Arg Cys Glu Asp Gly Gly Phe
95 100 105

Thr Cys Val Pro Leu Cys Ser Glu Asp Val Arg Leu Pro Ser Trp Asp
110 115 120 125

Cys Pro His Pro Arg Arg Val Glu Val Leu Gly Lys Cys Cys Pro Glu
130 135 140

Trp Val Cys Gly Gln Gly Gly Gly Leu Gly Thr Gln Pro Leu Pro Ala
145 150 155

Gln Gly Pro Gln Phe Ser Gly Leu Val Ser Ser Leu Pro Pro Gly Val
160 165 170

Pro Cys Pro Glu Trp Ser Thr Ala Trp Gly Pro Cys Ser Thr Thr Cys
175 180 185

Gly Leu Gly Met Ala Thr Arg Val Ser Asn Gln Asn Arg Phe Cys Arg
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Leu Glu Thr Gln Arg Arg Leu Cys Leu Ser Arg Pro Cys Pro Pro Ser
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Arg Gly Arg Ser Pro Gln Asn Ser Ala Phe
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 Cys Arg Cys Pro Asp Glu Pro Ala Pro Arg Cys Pro Ala Gly Val Ser
 35 40 45
 Leu Val Leu Asp Gly Cys Gly Cys Cys Arg Val Cys Ala Lys Gln Leu
 50 55 60
 Gly Glu Leu Cys Thr Glu Arg Asp Pro Cys Asp Pro His Lys Gly Leu
 65 70 75 80
 Phe Cys Asp Phe Gly Ser Pro Ala Asn Arg Lys Ile Gly Val Cys Thr
 85 90 95
 Ala Lys Asp Gly Ala Pro Cys Ile Phe Gly Gly Thr Val Tyr Arg Ser
 100 105 110
 Gly Glu Ser Phe Gln Ser Ser Cys Lys Tyr Gln Cys Thr Cys Leu Asp
 115 120 125
 Gly Ala Val Gly Cys Met Pro Leu Cys Ser Met Asp Val Arg Leu Pro
 130 135 140
 Ser Pro Asp Cys Pro Phe Pro Arg Arg Val Lys Leu Pro Gly Lys Cys
 145 150 155 160
 Cys Glu Glu Trp Val Cys Asp Glu Pro Lys Asp Gln Thr Val Val Gly
 165 170 175
 Pro Ala Leu Ala Ala Tyr Arg Leu Glu Asp Thr Phe Gly Pro Asp Pro
 180 185 190
 Thr Met Ile Arg Ala Asn Cys Leu Val Gln Thr Thr Glu Trp Ser Ala
 195 200 205
 Cys Ser Lys Thr Cys Gly Met Gly Ile Ser Thr Arg Val Thr Asn Asp
 210 215 220
 Asn Ala Ser Cys Arg Leu Glu Lys Gln Ser Arg Leu Cys Met Val Arg
 225 230 235 240
 Pro Cys Glu Ala Asp Leu Glu Glu Asn Ile Lys Lys Gly Lys Lys Cys
 245 250 255
 Ile Arg Thr Pro Lys Ile Ser Lys Pro Ile Lys Phe Glu Leu Ser Gly
 260 265 270
 Cys Thr Ser Met Lys Thr Tyr Arg Ala Lys Phe Cys Gly Val Cys Thr
 275 280 285
 Asp Gly Arg Cys Cys Thr Pro His Arg Thr Thr Thr Leu Pro Val Glu
 290 295 300
 Phe Lys Cys Pro Asp Gly Glu Val Met Lys Lys Asn Met Met Phe Ile
 305 310 315 320
 Lys Thr Cys Ala Cys His Tyr Asn Cys Pro Gly Asp Asn Asp Ile Phe
 325 330 335
 Glu Ser Leu Tyr Tyr Arg Lys Met Tyr Gly Asp Met Ala
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36

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<211> 32

<212> DNA

<213> DNA primer

<400> 5

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32

<210> 6

<211> 39

<212> DNA

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<400> 6

cggcaggatc cgccatcatg agaggcacac cgaagaccc

39

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32

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<211> 40

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40

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43

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ctgcaggcaa cactttagct tgggtccacc atgcagaaca ccaatattaa cacgctgcct      100
ggtctgtntg gatcccgagg tatggcagag gtgcaagacc tagtcctctt tcctctaact      150
cactgcctag gaggtggcc aagggtgtcca ggtcctcta gcccaacttc tgcctacaca      200
cacagnctat atcaaacaatg caca                                     250

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cgctgggagt acccctggtg ctggatggct gtggctgctg ccgngttat gtgcacggcg 180
gctgggggag ccctgcacta nactccacgt ctgcaaggnc agcnaagggc ctggtntgc 239

<210> 12

<211> 313

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 gccactccc tgcctacaca cacagcctat atcaaactg cacacgggag agctttctct 180
 ccgacttccc ctgggcaaga gatgggacaa gcagtcctt aatattgagg ctgcagcagg 240
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